

A DESCRIPTION OF THE CRANIUM OF

TOXODON PLATENSIS;

A gigantic extinct mammiferous animal, referrible to the Order Pachydermata, but with affinities to the Rodentia, Edentata, and Herbivorous Cetacea.

THE cranium, which is the subject of the present description, was found in the Sarandis, a small stream entering the Rio Negro, and about 120 miles to the N. W. of Monte Video: it had been originally embedded in a whitish argillaceous earth, and was discovered lying in the bed of the rivulet, after a sudden flood had washed down part of the bank.

The zoological characters deducible from this cranium, forbid its association, generically, with any known Mammiferous animal, and it must therefore be referred to an extinct genus, which I propose to call *Toxodon*,* from the curved or arched form of the teeth, as will afterwards be described. The specific name, in the absence of other means of knowing the peculiarities of the animal than those afforded by the skull, may be most conveniently taken from the district (La Plata), in which its remains were first discovered.

The dimensions of the cranium of the *Toxodon Platensis* amply attest that the animal to which it belonged was of a magnitude attained by few terrestrial quadrupeds, and only to be compared, in this respect, with the larger Pachyderms, or the extinct Megatherium. The length of the skull (of which a base view of the natural size is given in Plate I.) is two feet four inches: the extreme breadth one foot four inches. The other requisite admeasurements are given in the table at the conclusion of this description.

The general form of the skull, as seen from above, is pyriform; but viewed sideways, and without the lower jaw, it is semi-ovate; it is depressed, elongate, of considerable breadth, including the span of the zygomatic arches, but becoming rather suddenly contracted anterior to them, the facial part thence growing narrower to near the muzzle, which again slightly expands.

Among the first peculiarities which strike the observer, is the aspect of the plane of the occipital foramen, and of the occipital or posterior region of the cranium, the latter of which inclines from below upwards and forwards at an angle of 50° with the basal line of the skull. This slope of the back part of the skull is one of the characteristics of the Dinotherium; it is common to all the Cetacea, and is met with in a slighter degree in many Rodentia, and in the great Ant-eater and some others of the Edentate order. The corresponding aspect of the *foramen magnum* presents nearly the opposite extreme to man in the occipital

* Τοξον, arcus; οδον, dens.

scale, proposed by Daubenton to determine the diversities of the form of the cranium, as a gage of the intelligence of different animals*; and the indication of the limited capacity of the *Toxodon*, thus afforded, is strengthened by the very small proportion, which the bony walls of the cerebral cavity bear to the zygomatic and maxillary parts of the skull, and to the size of the vertebral column, as indicated by the condyloid processes, and foramen magnum.

The zygomatic arches are of remarkable size and strength; they commence immediately anterior to the sides of the occipital plane, increase in vertical extent as they pass outwards, forwards and downwards, and are suddenly contracted as they bend inwards to abut against the sides of the sockets of the two posterior molar teeth.

The cranial cavity is remarkably narrow at the space included by the zygomatic arches; being, as it were, excavated on each side to augment the space for the lodgment of the temporal muscles, so that its diameter at this part is less than that of the anterior extremity of the upper jaw. The upper surface of the cranium expands to form the post-orbital processes, and again contracts anterior to these.

The muscular ridges, or other characters, at the top of the skull, cannot be precisely determined, as a great proportion of the outer table of the bone is broken away, exposing a coarse and thick diplöe. There seems, however, to have been a strong ridge separating the occipital from the coronal or upper surface of the cranium. The form of the remaining parts, which are modified in relation to the attachment of the muscles of the jaws, indicates that these were powerfully developed both for the offices of mastication and prehension. The general form of the skull, while it presents certain points of resemblance to that of the aquatic Pachydermata, and even of the Carnivora, has much that is peculiar to itself; but, in the facial part, it approaches the nearest to that of the Rodentia; and the dentition of the *Toxodon*, as exhibited in the upper jaw, corresponds with that which characterizes the Rodent Order.

The teeth of the *Toxodon* consist of molars and incisors, separated by a long diastema, or toothless space. In the upper jaw the molars are *fourteen* in number, there being seven on each side; the incisors *four*, one very large, and one small, in each intermaxillary bone.

The general form and nature of the teeth are indicated by the sockets; and the structure of the grinders is exhibited in a broken molar, the last in the series on the left side of the jaw of the present cranium (See a figure of the grinding surface restored of this tooth, fig. 2, Pl. I.), and by another perfect molar, the last but one on the right side of the upper jaw, which, though not belonging to the same individual as the skull here described, undoubtedly appertains to the same species.

* Mem. de l'Acad. des Sciences de Paris, 1764, p. 568.